REMARKS

Claims 14-31 are pending. By this Amendment and the attached Request for Approval of Drawing Corrections and Addition, the specification, Figures 1 and 4 and claims 14 and 16 have been amended and Figure 6 has been added. No new matter has been added.

Applicants respectfully request that the Final status of the Office Action mailed on February 12, 2003 be withdrawn. M.P.E.P. 706.07, first sentence states that before final is in order a clear issue between Applicant and the Examiner should be developed. Amplifying on that, M.P.E.P. 706.07(a), states a second or any subsequent action on the merits shall be final, except where the Examiner introduces a new ground for a rejection that is neither necessitated by Applicant's amendment of the claims nor based on information submitted in an Information Disclosure Statement. Page 7 of the Office Action states that Applicants' July 25, 2002 Amendment necessitated the new grounds for rejection. First, Applicants submit that the Amendment solely amended the claims to place them in the form in which they were in prior to the June 18, 2002 Amendment, and thus the amendments did not give rise to new issues. Secondly, an Office Action was issued October 10, 2002 that had no 35 U.S.C. §112 rejections and a primary reference to Boucher, U.S. Patent No. 5,476,044, for a 35 U.S.C. §102 rejection and used three other references with Boucher for 35 U.S.C. §103 rejections. In reply to the October 10 Office Action, only a Request for Reconsideration was filed. For at least these reasons, Applicants believe that a Final Rejection is premature because Applicants were not given a fair opportunity to respond to the rejections made in the outstanding Office Action which applies a new reference as the primary reference, i.e., Jullian, U.S. Patent No. 5,014,622; reapplies Boucher on a more limited basis; adds 35 U.S.C. §103 rejections using Jullian in combination with other references; and adds 35 U.S.C. §112, second paragraph rejections and objections to the drawings. Therefore, the Office Action violates M.P.E.P. §706.07 by not establishing a clear issue and M.P.E.P. §706.07(a) by

adding new rejections not necessitated by amendment or submission of a reference. It is thus respectfully requested that the Final status of the outstanding Office Action be withdrawn.

Entry of the amendments is proper under 37 C.F.R. §1.116 as the amendments: (a) place the application in condition for allowance for the reasons discussed herein; (b) do not raise any new issue requiring further search and/or consideration because the amendments amplify issues previously discussed throughout prosecution; (c) satisfy a requirement of form asserted in the previous Office Action; (d) do not present any additional claims without canceling a corresponding number of finally rejected claims; and (e) place the application in better form for appeal, should an appeal be necessary. The amendments are necessary and were not earlier presented because they are made in response to new rejections raised in the final rejection. Entry of the amendments is thus respectfully requested.

The attached Appendix includes a marked-up copy of each rewritten paragraph (37 C.F.R. §1.121(b)(1)(iii)) and claim (37 C.F.R. §1.121(c)(1)(ii)).

The drawings are objected to under 37 C.F.R. §1.83(a) for failing to show a features of the invention. With regard to the mechanical bolt, having two positions, which is connected to a U-shaped key placed in constriction on the exterior of the housing, rotation of which allows the bolt to be placed in the desired position, Applicants have added Figure 6 which shows an exemplary embodiment of a circuit closing means, such as, for example, a mechanical bolt and U-shaped key responsive to the objection. Further, Applicants submit that one skilled in the art would know the structural features of a mechanical bolt and U-shaped key, as well as, any other structures/switches that can be used for the circuit closing means.

With regard to the subject matter disclosed on page 4, lines 17-21 of the specification regarding the firing means and the subject matter disclosed on page 4, lines 22-24 of the specification regarding the programming means, code wheels and a microcontroller, Applicants submit that code wheels (38), which are an exemplary embodiment of the

programming means, are shown as a labeled box in Figure 3. Similarly, with regard to the subject matter disclosed on page 5, lines 3 and 4 regarding the switching means, Applicants submit that the switching means (34) is shown as a labeled box in Figure 2. Further, 37 C.F.R. §1.83(a) states that features disclosed in the description and claims, where their detail illustration is not essential for a proper understanding of the invention, should be illustrated in the drawing in the form of a graphical drawing symbol or a labeled representation (e.g., a labeled rectangular box). Applicants submit that one skilled in the art at the time of the invention would know what code wheels are and the exact shape of the code wheels is not essential for the proper understanding of the claims. Similarly, Applicants submit that one skilled in the art at the time of the invention would know that there are various different structures/circuits which may be used as the switching means and the exact circuit/structure of the switching means is not essential for the proper understanding of the claims. Thus, Applicants submit that the labeled boxes to show the switching means and code wheels are adequate representations of the claimed features under 37 C.F.R. 1.83 and M.P.E.P. 608.02(d). It is respectfully requested that the objection to the drawings be withdrawn.

The specification is objected to for containing minor informalities. The Office Action states that it is unclear what "the means" on page 2, line 11 of the specification and "the means" on page 3, line 3 of the specification refers to. The Office Action also states that the word "housing" on page 7, line 7 of the specification lacks a reference number.

Applicants amended to the specification to recite "timing means" on pages 2 and 3 of the specification and to include reference numeral 23, which refers to an exemplary illustration of a housing. In addition, Figures 1 and 4 have been amended to identify housing (23). It is respectfully requested that the objection to the specification be withdrawn.

Claims 14-29 are rejected under 35 U.S.C. §112, second paragraph, for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the

invention. Specific language in claims 14, 16, 19, 20 and 28 is identified as forming the basis for the rejection. The rejection is respectfully traversed.

With regard to the "power generating means" feature recited in claim 14, Applicants respectfully submit that a description of the power generating means can be found at least on page 6, lines 1-5 of Applicants' specification. The power generating means can be any means which is capable of generating a power sufficient to actuate the priming resistor. For example, page 6, lines 1-5 discloses that the power generating means includes a power supply and a capacitor, which are capable of generating, upon expiration of the timing interval, the current sufficient to actuate the priming resistor. It is thus respectfully submitted that the specification does sufficiently describe the power generating means.

With regard to the "electrical power supply means" feature recited in claim 16, Applicants amended claim 16 responsive to the rejection.

With regard to "the timing means" feature recited in line 1 of claim 19, Applicants respectfully submit that antecedent basis for the feature can be found in line 2 of claim 16 which recites "means for timing". It is submitted that claim 19 depends from claim 17 and claim 17 depends from claim 16. It is thus respectfully submitted that there is sufficient antecedent basis for "the timing means" feature recited in claim 19.

With regard to "the microcontroller" feature recited in line 2 of claim 20, Applicants respectfully submit that antecedent basis for the feature can be found in line 2 of claim 17, which recites "the control means comprises a microcontroller." It is submitted that claim 20 depends from claim 19, which depends from claim 17. It is thus respectfully submitted that there is sufficient antecedent basis for "the microcontroller feature" recited in claim 20.

With regard to the "booby-trap means" recited in claim 28, Applicants submit that the language "for deliberately authorizing firing of the primer", which immediately follows the recitation of "booby-trap means" specifies the function of the "booby-trap means". It is thus

respectfully submitted that claim 28 sufficiently specifies the function of "booby-trap means" feature recited in claim 28.

It is respectfully requested that the rejection of claims 14-29 under 35 U.S.C. §112, second paragraph, be withdrawn.

The additional features of the priming device recited in claim 21 have not been rejected over any art. Thus, Applicants submit that the additional features recited in claim 21 are allowable.

Claims 14-20, 22, 23, 25, 26 and 30 are rejected under 35 U.S.C. §102(b) over Jullian, U.S. Patent No. 5,014,622; claim 20 is rejected under 35 U.S.C. §103(a) over Jullian in view of Howell, U.S. Patent No. 5,899,553; and claim 24 is rejected under 35 U.S.C. §103(a) over Jullian in view of Jarrott et al. (hereinafter "Jarrott"), U.S. Patent No. 4,632,031. The rejections are respectfully traversed.

Applicants submit that Jullian discloses a single timing means for determining when a time interval corresponding to the recorded blasting delay has expired following receipt of the blasting signal. Thus, the counter effectively counts through the recorded blasting delay (col. 2, lines 18-22). Nowhere does Jullian disclose a two or more timing intervals and the expiration of which are necessary to generate a second power intensity and/or to cause priming of the detonator.

Thus, Applicants submit that Jullian fails to disclose a priming device for a detonator, comprising timing means for timing the action of a firing element of a primer, power generating means, the power generating means for generating, through a resistive circuit, a second power intensity sufficient to actuate the firing element upon expiration of a first timing interval and a second timing interval as determined by the timing means ... wherein the power generating means does not generate the second power intensity until at least the first timing interval and the second timing interval have elapsed, as recited in claim 14. Similarly, Applicants submit that Jullian fails to disclose a priming device for a detonator,

wherein the timing means comprises a first timing interval for timing a user-programmable interval and a second timing interval for timing a first pre-programmed interval for the switching means and a third timing interval for timing a second pre-programmed interval, as recited in claim 16.

In addition, Applicants submit that Howell and Jarrott fail to overcome the deficiencies of Jullian as discussed above. In particular, with regard to Jarrott, Applicants submit that Jarrott discloses a safety time, which has a first delay timer (A) and a second delay timer (B), where the first and second delay timers are independent and provide a protection against a single fault condition (col. 2, lines 38-63). Nowhere does Jarrott disclose or suggest that the power generating means does not generate the second power intensity until at least the first timing interval and the second timing interval have elapsed, as recited in claim 14. Similarly, nowhere does Jarrott disclose a timing means comprising a first timing interval for timing a user-programmable interval and a second timing interval for timing a first pre-programmed interval for the switching means and a third timing interval for timing a second pre-programmed interval, as recited in claim 16.

For at least these reasons, Applicants submit that Jullian, either alone or in combination with Howell and/or Jarrott, fails to disclose or suggest all the features of claims 14 and 16, as well as all the features of claims 15, 17-20, 22-26 and 30, which depend from claims 14 and 16. It is respectfully requested that the rejections be withdrawn.

Claims 16, 27-29 and 31 are rejected under 35 U.S.C. §102(b) over Boucher, U.S. Patent No. 5,476,044. The rejection is respectfully traversed.

As discussed in the Request for Reconsideration filed on January 23, 2003, in contrast to Applicants' claim 16 which recites that a power generating means generates through a resistive circuit a current intensity sufficient to actuate the firing element upon expiration of a timing interval, the transformer (14) of Boucher, which serves as the high voltage power generating means, produces the high voltage power independently of the operation of timer

(212). Further, in Boucher, not only does the transformer (14), serving as the high voltage power source, generate its power independently of the operation of the timer (212), the timer (212) actually uses and depends on the generated high voltage power outputted by the transformer (14) to operate (col. 5, lines 42-44 of Boucher).

Accordingly, Applicants submit that Boucher fails to disclose a priming device for a detonator, wherein the timing means comprises a first timing interval for timing a user-programmable interval and a second timing interval for timing a first pre-programmed interval for the switching means and a third timing interval for timing a second pre-programmed interval, as recited in claim 16.

For at least these reasons, Applicants submit that Boucher fails to disclose all the features of claim 16 as well as all the features of claims 27, 28, 29 and 31, which depend from claim 16. It is respectfully requested that the rejection be withdrawn.

In view of the foregoing, Applicants submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 14-31 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number set forth below.

Respectfully submitted,

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WPB:PFD/dap

Attachments:
Appendix
Request for Approval of Drawing Corrections and Addition

Date: April 10, 2003

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P.O. Box 19928
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DEPOSIT ACCOUNT USE AUTHORIZATION
Please grant any extension necessary for entry;
Charge any fee due to our Deposit Account No. 15-0461

APPENDIX

Changes to Specification:

Page 2, lines 11-14:

According to an exemplary embodiment, the timing means includes a capacitor, switching means, and means for controlling the switching means allowing the capacitor to be charged for a charging time, then discharged, the discharge causing the element to act on the primer.

Page 3, lines 1-4:

In order to improve the operating flexibility of the device, the timing means may include means for programming the timing interval; the means can be entirely or partically integrated into the priming device. The timing means may include, for example, code wheels or a microcomputer.

Page 3, lines 22 - page 4, lines 4:

Figure 1 depicts a simplified general diagram of the device according to the invention;

Figure 2 shows a diagram of the principal programming means;

Figure 3 depicts another exemplary embodiment of the invention;

Figure 4 shows a diagram of the external programming means according to another exemplary embodiment of the invention; ~~and~~

Figure 5 shows a particular embodiment of the invention; and

Figure 6 shows an exemplary embodiment of a circuit closing means according to this invention.

Page 4, lines 13-16:

In this embodiment, the circuit closing means 20 may include, for example, a mechanical bolt 21, having two positions A and C, which is connected to a U-shaped key 22 placed in a constriction on the exterior of the housing 23, rotation of which allows the bolt 21

to be placed in the desired position. Figure 6 shows an exemplary embodiment of a circuit closing means, such as, for example, a U-shaped key 22 and mechanical bolt 21.

Page 7, lines 3-7:

The external programming device 100 may also include an assembly including an electrical power supply 110, a microcontroller 140, a display 145, two programming switches 146, 147, and a run/stop switch 112, and the transfer means including phototransistors 148, 149 associated with phototransistors 48, 49 arranged in the housing 23.

Changes to Claims:

The following is a marked-up version of each amended claim:

14. (Five Times Amended) A priming device for a detonator, comprising:

timing means for timing the action of a firing element of a primer;

an electrical power supply that provides a first power intensity to the timing means; and

power generating means, the power generating means for generating, through a resistive circuit, a second power intensity sufficient to actuate the firing element upon expiration of a first timing interval and a second timing interval as determined by the timing means, the first power intensity from the power supply not being sufficient to actuate the firing element, wherein the power generating means does not generate the second power intensity until at least the first timing interval and the second timing interval have elapsed.

16. (Four Times Amended) A priming device for a detonator, comprising:

an electrical power supply means for providing a current intensity sufficient for operation of at least a timing means, the timing means timing the action of a firing element of a primer; and

power generating means for generating, through a resistive circuit-, a current intensity sufficient to actuate the firing element upon expiration of a timing interval, the

power generating means comprising a capacitor, switching means, and controlling means for controlling the switching means by allowing the capacitor to be charged for a charging time and then discharged, the discharge causing the firing element to act on the primer, wherein:

the current intensity sufficient to operate the timing means is lower than the current intensity sufficient to actuate the firing element, and

the timing means comprises a first timing interval for timing a user-programmable interval and a second timing interval for timing a first pre-programmed interval for the switching means and a third timing interval for timing a second pre-programmed interval.